

# SMS Gateway EX™

## Connecting sensors to the cloud

### Technical Data Sheet

The SMS Gateway EX™ is an IoT sensor for motion monitoring as well as a hub for data collection and streaming to the cloud. The sensor is easily installed and only requires external power and internet access through ethernet or DSL. Once connected, the sensor automatically starts streaming data to the cloud, where the data is made available through an open API.

The unit also allows for offshore configuration of all SMS sensors and for transferring data from SMS sensors to DataReservoir.io™. Time series data for storage, distribution and analysis are delivered via DataReservoir.io™, allowing for safe and seamless data access and sharing.

### SPECIFICATION

**Input Power** 100-240 V AC

**Ambient Operating Temperature** -20°C to 60°C

**Storage Temperature** -20°C to 50°C

**Explosive Area Code** Ex db eb IIIB, T5, Gb

**Explosive Zone** Zone 1

**Connectivity to Internet** DSL with two wires or ethernet

**Fanless Edge Computer**

### CABINET SPECIFICATION

WALL MOUNTABLE

**Protection Category** IP66

**Dimensions** 65x34 cm

**Weight** 31 kg

**Gland Interface** 1 x M25 / 5 x M20

**Material:**

EX-D Marine grade copper-free aluminium, epoxy powder coated.

EX-E Stainless Steel

### EXTERNAL SENSOR SUPPORT

**Power Outlet** 24 V DC (1 A)

**3x Serial Lines** RS-485, RS-422, RS-232

**1x Ethernet**

TYPICAL INTERGRATION OF SERIAL LINE DEVICES

**SMS Sensors** Proprietary protocol over RS 485

**Modbus Devices** Modbus TCP

**Vessel instruments** (NMEA 0183, EM3000)

## MOTION SENSOR PERFORMANCE

### GYROSCOPE:

**Measurement ranges:** +/- 15 °/s to +/- 2000 °/s

**Calibrated range:** +/- 6 °/s

### ACCELEROMETER:

**Measurement ranges:** +/- 2g to +/- 16g

**Calibrated ranges:** +/- 0.26g (Ax, Ay), 0.96g to 1g (Az)

## NOISE

### GYROSCOPE:

**Angle Random Walk** ( (°/s)/√Hz ): < 0.0028

**Bias Instability** ( °/s ): < 0.002<sup>1</sup>

**Bias Drift** ( °/s\* √Hz ): ≈ 0.00002

**Linearity** (+/- %): < 0.1

### ACCELEROMETER:

**Velocity Random Walk** ( μg/√Hz ): < 65 (Ax, Ay), < 70 (Az)

**Bias Instability** ( μg ): < 20 (Ax, Ay), < 50 (Az)

**Bias Drift** ( μg\* √Hz ): ≈ 0.03<sup>2</sup> (Ax, Ay), 0.06 (Az)

**Linearity** (+/- %): < 0.1

## STATIC PERFORMANCE

### ACCELEROMETER (+/- 15° vertical angle):

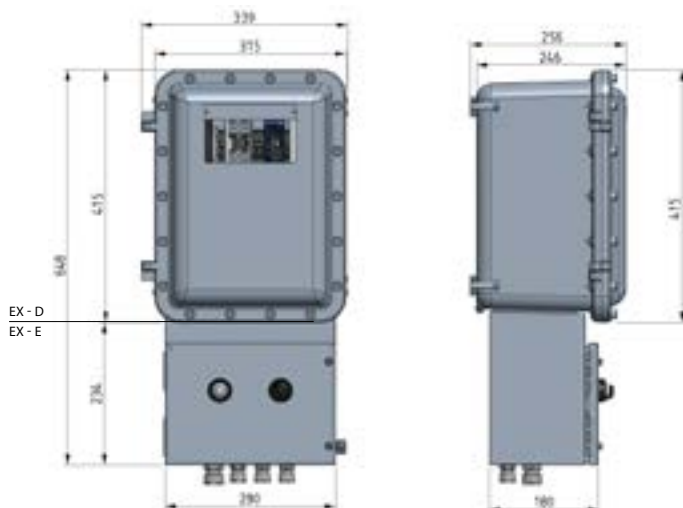
**Max angle deviation** (+/- ° ): < 0.03

**Quadratic Sum deviation** (1g +/- %): < 0.15

**Turn-on bias** (g stddev): < 0.00005 (Ax, Ay), < 0.0003 (Az)

### GYROSCOPE:

**Turn-on bias** (deg/s, stddev): < 0.008



<sup>1</sup> 0.002 °/s = 7.2 °/h

<sup>2</sup> Translates to approx. 0.17 mg/year, which alone would give 0.01 °/year inclinometer drift



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